

Amendments to and Listing of the Claims:

Please amend claims 1, 3-5 and 7-13, cancel claims 2, 6 and 14-20 and add new claims 21 and 22 as follows:

1. (currently amended) An all-optical switch mounted in a semiconductor device, the switch comprising:

(a) a first input for receiving a data stream;

(b) a second input for receiving a clocking signal;

[[~~(a)~~]] (c) first and second arms, each arm having a nonlinear optical element for receiving a data stream elements mounted in the semiconductor device and being in communication with the first input, the nonlinear optical elements for processing the data stream in response to the clocking signal;

[[~~(b)~~]] (d) a first variable time delay element mounted in the semiconductor device for receiving the clocking signal, the first time delay element having an a first adjustable time delay value and being in communication with the second input and the second nonlinear optical element; and

[[~~(c)~~]] (e) an optical coupler having plural outputs, the optical coupler being in communication with the first and second nonlinear elements, wherein the first adjustable time delay value of the first adjustable time delay element determines which the output of the optical coupler that individual data bits or groups of data bits in the data stream are desired to be routed to.

2. (canceled)

3. (currently amended) The switch of claim 1, wherein the optical coupler is a four port device placed at the output of the switch, the four port device having two input ports and two output ports.

4. (currently amended) The switch of claim 3, wherein outputs of the first and second nonlinear optical elements are fed into the input ports of the four port device.

5. (currently amended) The switch of claim 1, wherein the ~~time delay element delays a~~ clocking signal that controls the states of the first and second nonlinear optical elements.

6. (canceled)

7. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises a material of variable thickness in the shape of one of a wedge and a staircase.

8. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises a plurality of optical waveguides of various lengths.

9. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises a heating element which changes the properties of an optical waveguide when an electrical current is passed through the heating element.

10. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises a waveguide having a variable index of refraction.

11. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises an optical buffer having a recirculating optical waveguide loop.

12. (currently amended) The switch of claim 1, wherein the first variable time delay element comprises a material upon which an electro-optic effect is imposed.

13. (currently amended) A method of routing data through an all-optical switch mounted in a semiconductor device, the switch including (i) a first input for receiving a data stream, (ii) a second input for receiving a clocking signal, (iii) first and second arms, each arm having a nonlinear optical elements mounted in the semiconductor device and being in communication with the first input, the non linear optical elements for processing the data stream in response to the clocking signal element, ~~(ii)~~ (iv) a variable time delay element mounted in the semiconductor device, the variable time delay element having an adjustable time delay value and being in communication with one of the nonlinear optical elements, and ~~(iii)~~ (v) an optical coupler having plural outputs, the optical coupler being in communication with the first and second nonlinear optical elements, the method comprising:

(a) the first and second nonlinear optical elements receiving [[a]] the data stream from the first input; ~~at the first and second arms; and~~

(b) controlling the states of the first and second nonlinear optical elements with the clocking signal; and

[[(b)] (c) adjusting the time delay value of the variable time delay element depending upon which output of the optical coupler that individual data bits or groups of data bits in the data stream are desired to be routed to.

14-20. (canceled)

21. (new) The switch of claim 1, further comprising:

(f) a second variable time delay element mounted in the semiconductor device for receiving the clocking signal, the second variable time delay element having a second adjustable time delay value and being in communication with the first nonlinear optical element.

22. (new) The switch of claim 21, further comprising:

(g) a third variable time delay element mounted in the semiconductor device, the third variable time delay element for receiving the clocking signal, delaying the clocking signal and passing the delayed clocking signal to the first and second variable time delay elements for further delaying of the clocking signal.